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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/751,477

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Dong Jae You

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EXAMINER

CHEN, WEN YING PATTY

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/751,477	<b>Applicant(s)</b> YOU, DONG JAE	
	<b>Examiner</b> WEN-YING PATTY CHEN	<b>Art Unit</b> 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-9,11-15 and 17-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-9,11-15 and 17-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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## **DETAILED ACTION**

### ***Response to Amendment***

Applicant's Amendment filed on Mar. 24, 2009 has been entered. Claims 1, 2, 4-9, 11-15 and 17-23 remain pending in the current application.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 1, 6, 11, 12, 18, 19 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 6295105).**

With respect to claim 1 (Amended): Lee et al. discloses in Figure 9 a liquid crystal display device, comprising:

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a liquid crystal display panel (element 112);

a backlight unit having a light guide plate (element 120), a fluorescent lamp (element 118), a reflection sheet (element 124) substantially enclosing the fluorescent lamp to reflect light emitted from the fluorescent lamp, and a bottom cover (element 138) having an end portion (the portion of the bottom cover forming a C-shape) with a shape that substantially follows a contour of the reflection sheet (as shown; wherein the bottom cover having substantially the same shape as the reflection sheet) to substantially surround and encase the reflection sheet and to support and affix the reflection sheet, the reflection sheet enclosing an outer side of the fluorescent lamp except for a light exit portion of the fluorescent lamp and overlapping a portion of the light guide plate (as shown);

at least one optical sheet (element 116) positioned along an upper surface of the light guide plate,

wherein an end portion of the optical sheet is positioned on an end portion of the reflection sheet (as shown) and

wherein the end portion of the bottom cover (element 138) is positioned to leave a predetermined interval from the light guide plate and the optical sheet (as shown) to simplify assembly of the light guide plate.

Lee et al. is silent regarding the predetermined interval being within a range of about 0.1mm to about 50mm.

However, it would have been obvious to one of ordinary skill in the art to set the predetermined interval within a range of about 0.1mm to about 50mm, since “where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or

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workable ranges by routine experimentation.” *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235(CCPA 1955).

As to claim 6: Lee et al. further discloses in Column 4 lines 48-51 that the reflection sheet is formed of polyethylene terephthalate (PET).

As to claim 21: Lee et al. further discloses in Figure 9 that the end portion of the bottom cover (element 138) contacts the reflection sheet (element 124).

With respect to claim 11 (Amended): Lee et al. discloses in Figure 9 a backlight unit, comprising:

- a panel-type guide plate (element 120) having a light projection plane and a light incident plane;

- a reflection plate (element 122) along a rear side of the light guide plate;

- a lamp assembly at the light incident plane of the light guide plate, the lamp assembly including the fluorescent lamp (element 118) and a reflection sheet (element 124) at an outer side of fluorescent lamp;

- at least one optical sheet (element 116) over the light projection plane of the light guide plate, wherein an end portion of the optical sheet is positioned on an end portion of the reflection sheet (as shown); and

- a bottom cover (element 138) extending from a rear side of the reflection plate to an outer side of the reflection sheet such that an end portion of the bottom cover extends to the outer side of the reflection sheet substantially following a contour of the reflection sheet (as shown; wherein the bottom cover having substantially the same shape as the reflection sheet) to substantially surround and encase the reflection sheet and to support and affix the reflection

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sheet, the reflection sheet enclosing an outer side of the fluorescent lamp except for a light exit portion of the fluorescent lamp and overlapping a portion of the light guide plate (as shown),

wherein the end portion of the bottom cover (element 138) is positioned to leave a predetermined interval from the light guide plate and the optical sheet to simplify assembly of the light guide plate (as shown).

Lee et al. is silent regarding the predetermined interval being within a range of about 0.1mm to about 50mm.

However, it would have been obvious to one of ordinary skill in the art to set the predetermined interval within a range of about 0.1mm to about 50mm, since “where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235(CCPA 1955).

As to claim 12: Lee et al. further discloses in Column 4 lines 48-51 that the reflection sheet is formed of polyethylene terephthalate (PET).

As to claim 22: Lee et al. further discloses in Figure 9 that the end portion of the bottom cover (element 138) contacts the reflection sheet (element 124).

With respect to claim 18 (Amended): Lee et al. discloses in Figure 9 a backlight unit for a liquid crystal display device, comprising:

a light guide plate (element 120);

a reflection plate (element 122) along a rear side of the light guide plate;

a fluorescent lamp (element 118) along an outer periphery of the light guide plate;

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a reflection sheet (element 124) substantially enclosing the fluorescent lamp along the outer periphery of the light guide plate to reflect light from the fluorescent lamp to the light guide plate;

at least one optical sheet (element 116) positioned along an upper surface of the light guide plate, wherein an end portion of the optical sheet is positioned on an end portion of the reflection sheet (as shown); and

a bottom cover (element 138) along a rear side of the reflection plate having an end portion with a shape that substantially follows a contour of the reflection sheet (as shown) to substantially surround and encase the reflection sheet and to support and affix the reflection sheet, the reflection sheet enclosing an outer side of the fluorescent lamp except for a light exit portion of the fluorescent lamp and overlapping a portion of the light guide plate,

wherein the end portion of the bottom cover (element 138) is positioned to leave a predetermined interval from the light guide plate and the optical sheet to simplify assembly of the light guide plate (as shown).

Lee et al. is silent regarding the predetermined interval being within a range of about 0.1mm to about 50mm.

However, it would have been obvious to one of ordinary skill in the art to set the predetermined interval within a range of about 0.1mm to about 50mm, since “where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235(CCPA 1955).

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As to claim 19: Lee et al. further discloses in Figure 9 that a first end portion of the reflection sheet (element 124) overlaps a portion of the reflection plate (element 122) and a second end portion of the reflection sheet overlaps a portion of the light guide plate (element 120).

As to claim 23: Lee et al. further discloses in Figure 9 that the end portion of the bottom cover (element 138) contacts the reflection sheet (element 124).

**Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 6295105) in view of Lee (US 2003/0223020).**

Lee et al. discloses all of the limitations set forth in claim 1, and further disclose in Figure 9 that the backlight unit further comprises:

- a panel-type light guide plate (element 120) having a light projection plane and a light incident plane;

- a reflection plate (element 122) along a rear side of the light guide plate; and

- a lamp assembly at the light incident plane of the light guide plate, the lamp assembly including the fluorescent lamp (element 118) and the reflection sheet (element 124) at an outer side of the fluorescent lamp.

Lee et al. does not disclose a rectangular mold frame.

However, Lee discloses in Figures 31 and 32 of a backlight unit comprising a mold frame (element 500) for receiving the reflection plate, the light guide plate, the optical sheet, and the lamp assembly therein, wherein a bottom cover extends from a bottom of the mold frame.



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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Lee et al. wherein the backlight unit of the display device comprises a mold frame as taught by Lee, since Lee teaches that by providing the mold frame allows the backlight assembly to be securely attached to the chassis.

**Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 6295105) and Lee (US 2003/0223020) in view of Beiswenger et al. (US 4958911).**

Lee et al. and Lee disclose all of the limitations set forth in the previous claims and Lee et al. further discloses in Figure 9 that the reflection sheet (element 124) overlap a portion of the light guide plate (element 120) by a first overlap amount, but all do not disclose that the reflection sheet and the end portion of the bottom cover has a round shape.

However, Beiswenger et al. teaches in Figure 2 of forming a lamp reflection sheet (element 45) and an end portion of a bottom cover (element 24) in a round shape.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Lee et al. and Lee wherein the reflection sheet and the end portion of the bottom cover has a round shape as taught by Beiswenger et al., since Beiswenger et al. teaches that the curved corners helps to enhance the reflectance of the light thus improve the brightness of the illuminated light (Column 2, lines 39-60).

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**Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 6295105), Lee (US 2003/0223020) and Beiswenger et al. (US 4958911) in view of Shiotani et al. (JP 2001-338512).**

Lee et al., Lee and Beiswenger et al. disclose all of the limitations set forth in the previous claims, but all do not specifically disclose that the first overlap amount is within a range of about 0.2mm to about 30mm.

However, Shiotani et al. further disclose in Figure 3 a reflection sheet (element 8) overlapping the light guide plate (element 5) with an overlapping portion (element 21a) by an amount of 0.5mm (element w; Paragraph 0040), which is in the specified range of between 0.2mm and 30mm.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to construct a liquid crystal display device as taught by Lee et al., Lee and Beiswenger et al. wherein the first overlapping amount is as taught by Shiotani et al., since Shiotani et al. teaches that the overlapping amount determines the effective light-emitting dimension and the unused section of the light-emitting surface of the light guide plate (Paragraph 0040).

**Claims 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 6295105) in view of Nakano (US 2003/0053008).**

Lee et al. discloses all of the limitations of the liquid crystal display device set forth in the previous claims, but does not disclose that the reflection sheet is formed of one of a synthetic resin including one of a polymer having a high reflexivity and Ti.

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However, Nakano discloses in Paragraph 0034 and 36 and Figure 1 a reflection sheet (element 2) formed of one of a synthetic resin selected from the group consisting of ABS, PET, PVC and a non-metallic substance, which includes one of a polymer having a high reflexivity and Ti.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to make the reflection sheet for the liquid crystal display device disclosed by Lee et al. with the reflection sheet composition disclosed by Nakano, since the use of a polymer having a high reflexivity and Ti, especially the white titanium, exhibits a strong effect to improve the concealing property (Page 3, paragraph 0036).

**Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 6295105) and Lee (US 2003/0223020) in view of Matsuda et al. (US 2002/0167626).**

Lee et al. and Lee disclose all of the limitations set forth in the previous claims but do not disclose that the reflection sheet being formed by an extension of the reflection plate.

However, Matsuda et al. disclose in Figure 9 a reflection sheet (element 10) formed from the extension of the reflection plate (element 10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the single element structure of the reflection sheet/plate disclose by Matsuda et al. in the display device disclosed by Lee et al. and Lee, so that the thickness of the LCD device would be thinner by reducing two reflection layers to one single reflection layer, as taught by Matsuda et al. (Paragraph 0112).

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**Claims 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 6295105) in view of Beiswenger et al. (US 4958911).**

Lee et al. discloses all of the limitations set forth in the previous claims but does not disclose that the reflection sheet and the end portion of the bottom cover has a round shape.

However, Beiswenger et al. teaches in Figure 2 of forming a lamp reflection sheet (element 45) and an end portion of a bottom cover (element 24) in a round shape.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Lee et al. wherein the reflection sheet and the end portion of the bottom cover has a round shape as taught by Beiswenger et al., since Beiswenger et al. teaches that the curved corners helps to enhance the reflectance of the light thus improve the brightness of the illuminated light (Column 2, lines 39-60).

**Claims 14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 6295105) in view of Matsuda et al. (US 2002/0167626).**

Lee et al. discloses all of the limitations set forth in the previous claims but does not disclose that the reflection sheet being formed by an extension of the reflection plate.

However, Matsuda et al. disclose in Figure 9 a reflection sheet (element 10) formed from the extension of the reflection plate (element 10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the single element structure of the reflection sheet/plate disclose by Matsuda et al. in the display device disclosed by Lee et al., so that the thickness of the LCD

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device would be thinner by reducing two reflection layers to one single reflection layer, as taught by Matsuda et al. (Paragraph 0112).

**Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 6295105) in view of Shiotani et al. (JP 2001-338512).**

Lee et al. discloses all of the limitations set forth in the previous claims and further discloses in Figure 9 that the end portions of the reflection sheet (element 124) overlap a portion of the light guide plate (element 120) by a first overlap amount, but does not specifically disclose that a first overlap amount is within a range of about 0.2mm to about 30mm.

However, Shiotani et al. further disclose in Figure 3 a reflection sheet (element 8) overlapping the light guide plate (element 5) with an overlapping portion (element 21a) by an amount of 0.5mm (element w; Paragraph 0040), which is in the specified range of between 0.2mm and 30mm.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to construct a backlight unit as taught by Lee et al. wherein the first overlapping amount is as taught by Shiotani et al., since Shiotani et al. teaches that the overlapping amount determines the effective light-emitting dimension and the unused section of the light-emitting surface of the light guide plate (Paragraph 0040).

### ***Response to Arguments***

Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection.

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***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WEN-YING PATTY CHEN whose telephone number is (571)272-8444. The examiner can normally be reached on 8:00-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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